Occupational Health

Background

During the average working day, 45% of Americans spend close to eight hours, or a third of the 24-hour day, on work or work-related activities.[1] Given the length of time spent in this context, workplace environments and activities have an enormous impact on the working population's health. Nationally, millions of workers are injured or fall ill every year due to hazards in their workplaces.[2] Between 2000 and 2010, each year had an average of 5,477 workplace fatalities nationwide.[3] The most common causes of these fatalities, in order, were: highway incidents, falls, homicides, and being struck by an object.

Health Equity Highlight: Low-income Health Care Workers

Health care is one of top three fastest growing sectors over the last decade in Maine, employing 28% of all Maine employees. Almost one third of healthcare employees working nursing and residential care facilities, and make on average 36% less that the overage average salary in Maine.[6]

While rates of occupational injury to healthcare workers have decreased over the past decade, rates of injuries in nursing and residential care facilities are not decreasing as fast as older health care sectors and are almost twice as high as all injuries in all sectors combined.[7]

Nursing aides, orderlies, and attendants consistently ranked among the occupations reporting the most disabling workers' compensation claims from 1995 to 2010.8 These workers' job duties include lifting and moving patients and materials resulting in a high frequency of overexertion and musculoskeletal disorders. There is high turnover in this occupation which may contribute to the high rate of injuries.

According to the Government Accountability Office (GAO), these numbers may all be underestimates.[4] The GAO found that there are incentives for underreporting, both between employees and employers and from employers to government agencies. This agency also reports that national and state data systems designed to capture information about work-related illnesses and injuries are inadequate to the task. In addition to the undercounting that occurs among regular employees and employers, "non-standard work relationships" (e.g. contingent employment, contracting, unofficial and part-time arrangements) lead to further undercounting, as employers and employees in these relationships may not be bound by reporting rules.[5] Work-related health hazards cause an enormous impact on productivity and quality of life that is not fully calculable.

The federal Occupational Safety and Health Administration (OSHA) sets national standards for workplace health and safety in the private sector. The Maine Department of Labor (DOL) sets health and safety standards for Maine employees in the public sector. DOL also analyzes data from lost-time workers' compensation claims to develop information about Maine's work related injuries and illnesses. In addition, each year, DOL administers the federal Survey of Occupational Injuries and Illnesses to a sample of Maine employers, which generates additional information regarding work related injury and illness rates in Maine.

The Department of Health and Human Services administers the Occupational Disease Reporting Law which requires healthcare providers, healthcare facilities and medical laboratories to reported designated occupational diseases. Another partner in addressing workplace safety is the Department of Environmental Protection, which sets standards for and conducts inspections related to environmental hazards in workplaces.

Outside of state government, hospitals throughout the state provide both occupational medicine and workplace wellness programs that can be accessed by employers.

The Public Health Response

The workplace environment, from its production processes to quality of its tools, is the largest factor in a worker's safety and health and his or her risk of injury, illnesses, or even fatality.[9] Reduction of poor health outcomes for employees requires assessment of the theories and premises behind how the work is carried out, as well as examination of work methods and basic site safety. Ideally, workplaces and processes would be designed beforehand with safety and comfort in mind (i.e. properly ventilated, equipped with appropriate tools of good quality, lighted and furnished so as to reduce the impact of physical motions required, equipped with break spaces, etc.). However, healthy and safety audits can still be conducted to benefit the workplace even if initial design is long in the past. The National Institute for Occupational Safety and Health (NIOSH) has generated stakeholder-designed solutions for eliminating hazards and eliminating risks tailored to specific industries.

HM2020 Objectives:

1. Reduce the rate of injury and illness cases involving days away from work due to overexertion or repetitive motion

In the first half of the decade from 2000 to 2005, a total of 93,100 work-related injuries and illnesses were reported to the state.[9] The most common injury-causing events, in order, were overexertion in lifting and falling on floors or other surfaces.

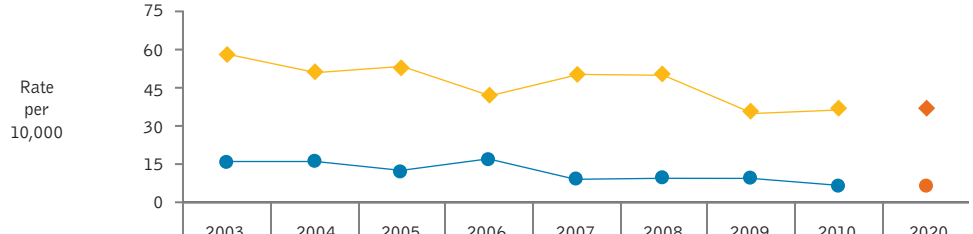
1a. Reduce the rate of injury and illness cases involving days away from work due to overexertion

With the increase of health care workers and care-giving occupations due to Maine's older population, this cause of injury merits monitoring. Although the rate is not stable due to small numbers, the trend has been generally decreasing, and the Healthy Maine 2020 goal is another 5% decrease in the next 10 years.

1b. Reduce the rate of injury and illness cases involving days away from work due to repetitive motion

Repetitive injuries are greatest in the office and manufacturing industry sectors. This has also been trending downwards, and the target for 2020 is a further 10% reduction.

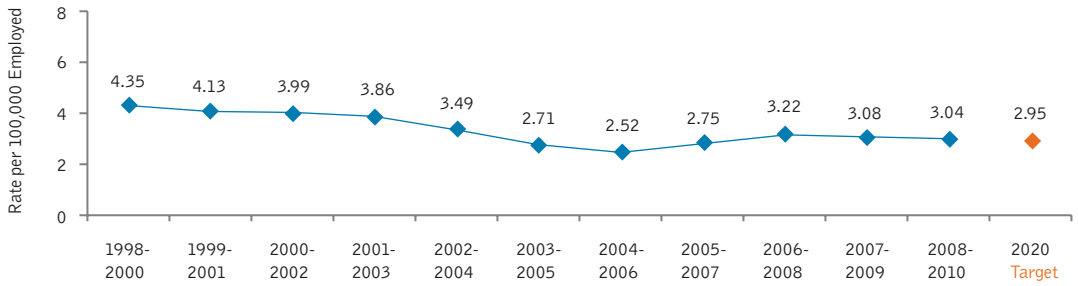
Incidence Rates of Injury and Illness Cases Involving Days Away from Work Due to Overexertion and Repetitive Motion, per 10,000 FTE, Maine, 2003-2010



	2003	2004	2005	2006	2007	2008	2009	2010	2020 Target
Overexertion	57.9	50.6	52.8	42.89	49.9	49.9	35.1	36.1	34.3
Repetitive motion	16.0	15.9	12.6	16.5	9.0	8.4	9.1	6.2	5.9

Data source: U.S. Bureau of Labor Statistics Survey of Occupational Injuries and Illnesses

Rate of Death From Work-related Injuries Per 100,000 Employed, Maine, Three-year Moving Averages, 1998-2010



Source: Maine Bureau of Labor

2. Reduce deaths from work-related injuries

In the latter half of the decade, from 2005 to 2010, a total of 115 Maine workers died as a result of workplace hazards.[5] Despite the variations in year to year rates, Maine's rate is consistently one of the highest in New England. Maine's high proportion of workers in Farm, Forest and Fishing Industries puts a greater number of Maine workers' at risk for fatal injuries on the job. The majority of Maine's worker fatalities are the result of transportation incidents across industries.

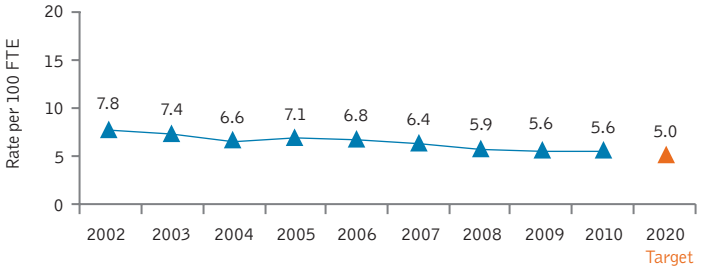
The work-related injury fatality rate has fluctuated over time. There was a slow decline in the rate in the first part of the last decade, followed by a small increase in the second half of the decade. The increases did not reach the same levels as the highest point in the early part of the decade. In 2009 the rate was 3.04 deaths per 100,000 employed; the Healthy Maine 2020 goal is 2.95 deaths per 100,000.

3. Reduce nonfatal work-related injuries

Estimating the burden and tracking work-related injuries can help target prevention programs and activities. Information on reported cases can be used to identify contributory factors and to develop improved or new prevention strategies or regulations to protect workers.

The most frequently referenced measurement of the likelihood of being injured or ill on the job is the non-fatal total recordable incidence case rate. This rate has decreased gradually since 2002. The target is a 10% reduction in the next decade.

Non-fatal Work-related Injuries Per 100 FTE, Maine, 2009-2010

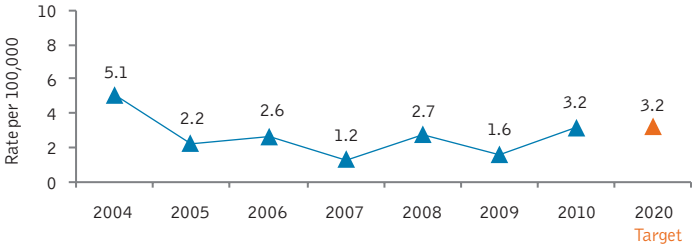


Data source: U.S. Bureau of Labor Statistics Survey of Occupational Injuries and Illnesses

4. Reduce the proportion of persons who have elevated blood lead concentration from work exposure

From 2004-2010, as many as 107 Maine adults developed elevated blood leads > 25 mcg/dl as a result of work exposures.[10] In 2010 the rate of elevated blood levels in adults was 3.2 adults per 100,000; the Healthy Maine 2020 goal is 3.2. The goal aims for a 0% reduction based on estimated increases in screening and decreases in exposure.

Rate of Elevated Lead Blood Levels in Adults From Work Exposure, Maine, 2004-2010

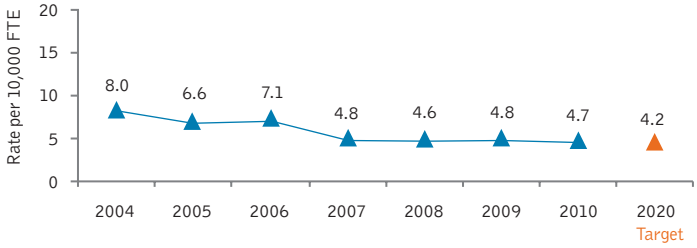


Data source: Maine ABLES program, BLS Employment status of the civilian non-institutional population.

5. Reduce new cases of work-related, noise-induced hearing loss

Approximately 22 million U.S. workers are exposed to hazardous noise levels at work, and an additional 9 million exposed to ototoxic chemicals. An estimated $242 million is spent annually on worker's compensation for hearing loss disability.[11]

Work-Related, Noise-induced Hearing Loss Rate Per 10,000 FTE, Maine, 200-20109



Data source: U.S. Bureau of Labor Statistics Survey of Occupational Injuries and Illnesses

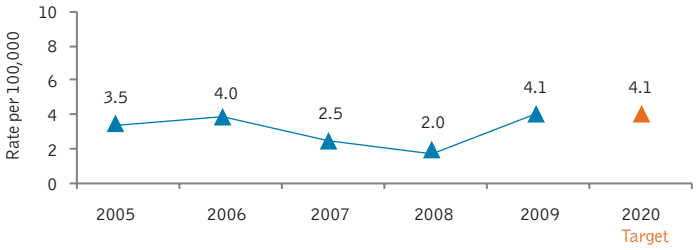
The Maine 2010 work-related noise-induced hearing loss rate was 4.7 people per 10,000 FTE; the Healthy Maine 2020 goal is 4.2 per 10,000. 2004 is the earliest year that this data was reported as a separate category. Since then, there has been a general decline in the rate. The Healthy Maine 2020 goal is a 10% reduction.

6. Reduce emergency department visits for work-related asthma

One in seven U.S. adults suffers from work-related asthma, according to American Thoracic Society estimates. Work-related asthma can be prevented. Monitoring trends will help us to develop intervention strategies.

In Maine, the number of emergency department (ED) visits due to work-related asthma varied from 2005 to 2009, but the trend did not show significant decreases or increases. In 2009 there was a rate of 4.1 ED visits per 100,000 and the Healthy Maine 2020 goal is the same. The 0% reduction is based on an increase in recognition of the causal relationship between workplace exposures and asthma and a decrease in exposure.

Rate of ED Visits Due to Work-related Asthma Per 100,000 Employed, Maine, 2005-2009



Source: Maine Health Data Organization

Methodology Notes:

1. Reduce the rate of injury and illness cases involving days away from work due to overexertion or repetitive motion

SUB-OBJECTIVES:

1a. Reduce the rate of injury and illness cases involving days away from work due to overexertion.

Measure: The rate of injury and illness cases involving days away from work due to overexertion per FTE.

Numerator: Number of injuries and illness with the event code of overexertion X 20,000,000.

Denominator: Total hours worked.

Target setting method: 5% reduction.

1b. Reduce the rate of injury and illness cases involving days away from work due to repetitive motion.

Measure: The rate of injury and illness cases involving days away from work due to repetitive motion per FTE.

Numerator: Number of injuries and illness with the event code of repetitive motion X 20,000,000.

Denominator: Total hours worked.

Target setting method: 10% reduction.

Other notes: Days away criteria, employer reports, and lack of self-employed in sample results in undercounts. Survey is based on employers' self-reporting their own business's injury and illness record and is therefore subject to employers' knowledge of OSHA recordkeeping rules. There is some evidence of inconsistencies between businesses relating to this knowledge. Further detail is provided in Bureau of Labor documentation. After reviewing HP 2020 options, the occupational health sub-committee chose measures relevant to Maine that are similar to those on the CSTE occupational health indicator list.

2. Reduce deaths from work-related injuries

Measure: Deaths from work-related injuries.

Numerator: Count of work-related deaths in persons greater than 16 years of age.

Denominator: Employed population age 16 years or older residing in Maine (from: Employment status of the civilian non-institutional population in states by sex, race, Hispanic or Latino ethnicity, marital status, and detailed age; Maine; bls.gov/gps/#tables).

Target setting method: 10% reduction in 10 year moving average.

Other notes: The numerator is derived from multiple data sources, including death certificates, media sources, workers comp, OSHA, & USCG, and de-duplicated. Small counts in the numerator and denominator throughout New England result in large year to year variations. Due to the high self-employed population, and some difficulty determining who may have been "on the job" at the time of a motor vehicle-related fatality, this number is likely to be an undercount. Also, while the numerator takes into account the number of worker fatalities in Maine, the denominator looks at the number of those living in Maine who are employed. Further detail is provided in Bureau of Labor documentation. After reviewing HP 2020 options, the occupational health sub-committee chose measures relevant to Maine that are similar to those on the CSTE occupational health indicator list.

3. Reduce non-fatal work-related injuries

Measure: non-fatal injuries per FTE.

Numerator: Number of "recordable" injuries x 200,000 (100 employees x 40 hours x 50 weeks).

Denominator: Total hours worked.

Target setting method: 10% reduction.

Other Notes: Days away criteria, employer reports, and lack of self-employed in sample results in undercounts. Survey is based on employers' self-reporting their own business's injury and illness record and is therefore subject to employers' knowledge of OSHA recordkeeping rules. There is some evidence of inconsistencies between businesses relating to this knowledge. Further detail is provided in Bureau of Labor documentation. After reviewing HP 2020 options, the occupational health sub-committee chose measures relevant to Maine that are similar to those on the CSTE occupational health indicator list.

4. Reduce the proportion of persons who have elevated blood lead concentration from work exposure

Measure: The rate of persons who have elevated blood lead concentration from work exposure X 100,000 divided by the number of employed persons.

Numerator: Number of Maine adults, > age 16, in a given year with blood lead level > 25 mcg/dl due to a work exposure.

Denominator: Employed population age 16 years or older residing in Maine (from: Employment status of the civilian non-institutional population in states by sex, race, Hispanic or Latino ethnicity, marital status, and detailed age; Maine; bls.gov/gps/#tables).

Target setting method: 0% reduction based on increases in screening and decreases in exposure.

Other notes: Other notes: Current data source only includes follow-up on work exposure for those with blood lead level > 25 mcg/dl, although the new standard is > 10 mcg/dl. When data on the new standard becomes available, it may be desirable to change this objective to match the new standard. National ABLES calculates rates with total (work and non-work related) as the numerator with employed persons as denominator. In most states this may be ok as almost all leads are occupational. In Maine about 30% of our elevated leads are non-occupational, so the rates you see here for just work-related are lower than on the ABLES website. Rates for the individual years are prevalence rates, so some individuals may appear in more than one year. The 2004-2010 total is de-duplicated. After reviewing HP 2020 options, the occupational health sub-committee chose measures relevant to Maine that are similar to those on the CSTE occupational health indicator list.

5. Reduce new cases of work-related, noise-induced hearing loss

Measure: Work-related, noise-induced hearing loss incidence per 10,000 FTE.

Numerator: Number of reported hearing losses (based on Bureau of Labor standard).

Denominator: Total hours worked.

Target setting method: 10% reduction.

Other notes: Days away criteria, employer reports, and lack of self-employed in sample results in undercounts. Survey is based on employers' self-reporting their own business's injury and illness record and is therefore subject to employers' knowledge of OSHA recordkeeping rules. There is some evidence of inconsistencies between businesses relating to this knowledge. Further detail is provided in Bureau of Labor documentation. After reviewing HP 2020 options, the occupational health sub-committee chose measures relevant to Maine that are similar to those on the CSTE occupational health indicator list.

6. Reduce emergency department visits for work-related asthma

Measure: Rate of emergency department visits due to work-related asthma.

Numerator: Number of emergency department visits with asthma as the primary diagnoses, and workers' compensation as the payer or a E-code.

Denominator: Employed population age 16 years or older residing in Maine (from: Employment status of the civilian non-institutional population in states by sex, race, Hispanic or Latino ethnicity, marital status, and detailed age; Maine; bls.gov/gps/#tables).

Target setting method: 0% reduction based on increases in screening and decreases in exposure.

Other notes: Data is age-adjusted. May be an undercount if E-code on work-related is not included and workers comp is not the payer (for example, an individual uses his or her own insurance to pay). After reviewing HP 2020 options, the occupational health sub-committee chose measures relevant to Maine that are similar to those on the CSTE occupational health indicator list.

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